

## CLAIMS

What is claimed is:

1. An image display control method in a 3D image whereby an object in a 3D image visually changes based on a predetermined prescribed game program,

wherein a display character representing a game status is structured of an aggregate of polygons, and displayed as a part of a background in a screen of a game in progress.

2. An image display control method in a 3D image according to claim 1, wherein a gradation is performed to said polygons.

3. An image display control method in a 3D image whereby an object in a 3D image visually changes based on a predetermined game program,

wherein said 3D image comprises a life indicator for expressing a prescribed life volume of said object, and a display control is made such that the rate of decrease of said life indicator becomes higher in comparison to a standard movement when a special movement is designated.

4. An image display control method in a 3D image according to claim 3, wherein said object is displayed at least in its contour, and said life indicator is provided within the object and moves together with the motion of said character.

5. An image display control method in a 3D image according

to claim 3 or claim 4, wherein the movement of said object is a swing motion of a racket counter-stroking a spherical body, and another display control is made such that the contact point position of counter-stroking said spherical body with the racket is locked on at the time of said special movement, and said spherical body is counter-stroked at said contact point in synchronization with said swing motion.

6. An image display control method in a 3D image whereby an object in a 3D image visually changes based on a predetermined game program,

wherein a text information having significance in a game is displayable in said 3D image, and a display control is made such that said text information is displayed in a state where a plurality of fragments are dispersed in the displayed image, and said fragments gradually assemble to create a text.

7. An image display control method in a 3D image whereby an object in a 3D image visually changes based on a predetermined game program,

irrespective of a display viewpoint of said object, a special image processing is constantly performed around said object.

8. An image display control method in a 3D image according to claim 7; wherein said special image processing is at least one among an image processing for displaying a plurality of radial

lines from a contour of the object beginning at a predetermined center within said object to a position separated a prescribed distance, or an image processing for displaying a gradation within the area connecting the tips of said radial lines in which a gradation sequence changes gradually from the predetermined center of said object.

9. An image display control method in a 3D image according to claim 7 or claim 8, wherein a collision ball is set to a respective plurality of parts of said object, and said special image processing area is set based on the collision ball.

10. An image display control method in a 3D image according to claim 9, wherein a projection plane is provided between said object and an object display viewpoint, a reference circle is set among a plurality of projection circles of said respective collision balls displayed on the projection plane, a plurality of radial lines are generated for dividing around a center of said reference circle in N (N is an integral number larger than a number of collision ball projection circles excluding the reference circle) segments, an intersecting point is sought for the respective N number of radial lines and the farthestmost position against the center of said reference circle of the respective collision ball projection circles, and an area surrounded by the a plurality of lines connecting a plurality of adjacent intersecting points is set as said special image

processing area.

11. An image display control device in a 3D image whereby an object in a 3D image visually changes based on a predetermined prescribed game program, comprising: background image display means for displaying a background 3D image of a game in progress; a display character structured of an aggregate of polygons and which represents a game status; and disposal means for disposing said display character as a part of said background image within a screen.

12. An image display control device in a 3D image according to claim 11, further comprising gradation means for performing a gradation such that the display character mounted with said disposal means stands out from said background 3D image.

13. An image display control device in a 3D image whereby an object in a 3D image visually changes based on a predetermined game program, comprising:

life volume calculation means for calculating a prescribed life volume of said object;

a life indicator for displaying the life volume calculated with said life volume calculation means on said 3D image;

designation means for designating a movement of said object; and

life volume correction means for correcting a rate of decrease of said life volume to be higher in comparison to a

standard movement by controlling said calculation means when a special movement is designated to said object with said designation means.

14. An image display control device according to claim 13, wherein said life indicator is disposed within said object displayed in 3D.

15. An image display control device in a 3D image according to claim 13 or claim 14, further comprising display control means for displaying a movement of said object as a swing motion of a racket counter-stroking a spherical body; wherein said display control means has lock-on means for locking on said spherical body to a counterstroke contact point position of the racket upon said special movement, and synchronization control means for synchronizing said swing motion and the movement of the spherical body such that said spherical body is counter-stroked at said contact point with a probability of 100%.

16. An image display control device in a 3D image whereby an object in a 3D image visually changes based on a predetermined game program, comprising:

a plurality of fragments dispersed in said 3D image in an initial state and which becomes a text information significant in a game by being aggregated in a prescribed combination;

flotation movement means for floating and moving said fragments in a 3D screen; and

positioning control means for performing a control of positioning the respective fragments in the final coordinate position in the 3D screen preset for each of said plurality of fragments, and structuring an aggregate with the plurality of fragments.

17. An image display control device in a 3D image whereby an object in a 3D image visually changes based on a predetermined game program, comprising:

viewpoint movement control means for displaying the object moving in a 3D screen by moving a viewpoint; and

special image processing means for performing special image processing around said object in said viewpoint set with said viewpoint movement control means.

18. An image display control device in a 3D image according to claim 17, wherein said special image processing means further performs at least one among an image processing for displaying a plurality of radial lines from a contour of the object beginning at a predetermined center within said object to a position separated a prescribed distance, or an image processing for displaying a gradation within an area connecting a plurality of tips of the radial lines in which a gradation sequence changes gradually from the center of said object.

19. An image display control device in a 3D image according to claim 17 or claim 18, wherein said special image processing

means further comprises a plurality of collision balls set to a respective plurality of parts of said object, and said special image processing area is set based on the collision balls.

20. An image display control device in a 3D image according to claim 19, wherein said special image processing means further comprises: reference circle setting means for setting a reference circle among a projection plane provided between said object and an object display viewpoint, and a plurality of projection circles of said respective collision balls displayed on the projection plane; radial line generation means for generating a plurality of radial lines which divide said reference circle around a center of said reference circle in  $N$  ( $N$  is an integral number larger than the number of collision ball projection circles excluding the reference circle) segments; intersecting point calculation means for calculating an intersecting point for the respective  $N$  number of radial lines and a farthestmost position against the center of said reference circle of the respective collision ball projection circles; and special image processing area setting means for setting an area surrounded by a plurality of lines connecting a plurality of adjacent intersecting points as said special image processing area in the intersecting points calculated with said intersecting point calculation means.

21. A program for making a computer realize the image display

control method in a 3D image according to any one of claims 1 to 10, or a recording medium having recorded thereon said program.

22. A game device having preprogrammed therein the image display control method in a 3D image according to any one of claims 1 to 10.

23. An image processing device which places a display body within a virtually-defined three-dimensional space, creates a picture of the display body viewed from a virtual viewpoint with image processing means, and displays the picture on display means, said image processing means comprising: display body setting means for setting a plurality of display bodies within said three-dimensional space; display body disposal means for overlappingly disposing another display body within one display body; display body image setting means for setting an image of said display body such that the other display body housed within the display body becomes visible; and display body movement mode reflection means for making at least one movement mode of said overlappingly disposed display body reflect a movement mode of the other display body.

24. An image processing device according to claim 23, wherein each of said overlappingly disposed plurality of display bodies is formed of a transparent display body and an opaque display body housed therein.

25. An image processing device according to claim 23 or claim



24, wherein each of said overlappingly disposed display body is a second display body housed within a first display body, and said display body movement mode reflection means comprises: display body movement detection means for detecting a movement of the first display body or the second display body; and movement adjustment means for realizing a movement matching the detected movement in the other display body.

26. An image processing device according to claim 25, wherein said display body movement detection means comprises display body moving direction detection means for detecting a moving direction of the display body, and wherein said movement adjustment means comprises means for realizing an orientation or a moving direction of the other display body matching the detected moving direction.

27. A game device comprising the image processing device according to any one of claims 23 to 26.

28. A program employed in an image processing device which places a display body within a virtually-defined three-dimensional space, creates a picture of the display body viewed from a virtual viewpoint with image processing means, and displays the picture on display means, said program instructing a computer that realizes said image processing means to realize: display body setting means for setting a plurality of display bodies; display body disposal means for overlappingly

disposing another display body within one display body; display body image setting means for setting an image of said display body such that the other display body housed within the display body becomes visible; and display body movement mode reflection means for making at least one movement mode of said overlappingly disposed display body reflect a movement mode of the other display body.

29. A storage medium storing a program employed in an image processing device which places a display body within a virtually-defined three-dimensional space, creates a picture of the display body viewed from a virtual viewpoint with image processing means, and displays the picture on display means, said program instructing a computer that realizes said image processing means to realize: display body setting means for setting a plurality of display bodies; display body disposal means for overlappingly disposing another display body within one display body; display body image setting means for setting an image of said display body such that the other display body housed within the display body becomes visible; and display body movement mode reflection means for making at least one movement mode of said overlappingly disposed display body reflect a movement mode of the other display body.

30. An image display control method which sets a three-dimensional spatial coordinate system and a

three-dimensional viewpoint coordinate system for following a viewpoint movement, converts the coordinates of a first display body belonging to said spatial coordinate system and being operated by a player and a second display body other than said first display body belonging to said spatial coordinate system into said viewpoint coordinate system by employing a projection emitted from said viewpoint, and displays the first display body and the second display body being disposed in a virtual three-dimensional space on a display screen, wherein said second display body is structured of polygons and is a display body representing the game status of the first display body operated by said player.

31. An image display control method according to claim 30, wherein a gradation is performed to the polygons of said second display body.

32. An image display control method which sets a three-dimensional spatial coordinate system and a three-dimensional viewpoint coordinate system for following the viewpoint movement, converts the coordinates of a first display body belonging to said spatial coordinate system and being operated by a player and a second display body other than said first display body belonging to said spatial coordinate system into said viewpoint coordinate system by employing a projection emitted from said viewpoint, and displays the first display body

and the second display body being disposed in a virtual three-dimensional space on a display screen, wherein said first display body is at least formed of its contour, and another display body representing information relating to said first display body is internally provided to said first display body and changes in accordance with the game progress.

33. An image display control method for displaying a display body disposed in a virtual three-dimensional space on a display screen, wherein a special processing is performed such that a display viewpoint is provided to a position for displaying said first display body operated by a player from a rear on a display face so as to constantly follow a shape of the display body.

34. An image display control method according to claim 33, wherein said special image processing is at least one among an image processing for displaying a plurality of radial lines from a contour of an object beginning at a predetermined center within said object to a position separated a prescribed distance, or an image processing for displaying a gradation within an area connecting a plurality of tips of said radial lines in which a gradation sequence changes gradually from a center of said object.

35. An image display control method according to claim 33 or claim 34, wherein a collision ball is set to each of a respective plurality of parts of said display body, and said special image

processing area is set based on the collision ball.

36. A game program which is employed in and executed on a device that performs at least information processing including image processing, and which displays an object disposed in a virtual three-dimensional space on a screen by shifting, changing or moving said object in accordance with a designation from an input device operated by a player, wherein a display image reflecting a game progress status of the object processed in accordance with the designation from said input device is disposed so as to be overlappingly displayed on a display image of said object in a state of being visible to the player, and shifted together with a shifting of the display image of said object while maintaining the disposal status of said overlapping display.

37. A game program according to claim 36, wherein said status reflection display image is an information display by text or symbols representing at least a life gauge, a score, a countdown of a time limit of said object.

38. A game program according to claim 36, wherein said status reflection display image is a character staging a behavior matching the game progress status of said object.

39. A game program according to any one of claims 36 to 38, wherein the display body structuring said status reflection display image is disposed immanent to said object in said virtual three-dimensional space, and wherein said object is displayed

transparently or opaquely such that said status reflection display image can be viewed from the player.

40. A game program which is employed in and executed on a device that performs information processing including image processing, and which displays an object disposed in a virtual three-dimensional space on a screen by shifting, changing or moving said object in accordance with a designation from an input device operated by a player, wherein said program realizes: means for progressing a game by performing an image processing to said object in response to the designation from said input device; means for generating a display body reflecting a game progress status of the object processed in accordance with the designation from said input device; means for disposing the display image of said status reflection display body so as to be overlappingly displayed on a display image of said object in a state of being visible to the player; and means for making the display image of said status reflection display body shift together with the shifting of the display image of said object while maintaining the disposal status of said overlapping display when said object is to shift in said virtual space.

41. An image display device for executing the game program according to any one of claims 36 to 40.